UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/567,692	02/07/2006	Volker Rasche	DE 030276	3943

24737 7590 07/10/2008

PHILIPS INTELLECTUAL PROPERTY & STANDARDS
P.O. BOX 3001
BRIARCLIFF MANOR, NY 10510

EXAMINER	
KAO, CHIH CHENG G	
ART UNIT	PAPER NUMBER
2882	
MAIL DATE	DELIVERY MODE
07/10/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/567,692	RASCHE, VOLKER	
	Examiner	Art Unit	
	Chih-Cheng Glen Kao	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 February 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/7/06; 5/3/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: (fig. 1, #9).

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The specification is objected to because it refers to claims numerous times (pg. 1, lines 23-25), which may create discrepancies and new matter issues if future claim amendments were to be made. Therefore, the examiner suggests removing all references to the claims that are in the specification.

Appropriate correction is required.

Claim Objections

3. Claims 1-10 are objected to because of the following informalities, which appear to be minor draft errors including grammatical and/or antecedent basis problems.

In the following format (location of objection; suggestion for correction), the following correction(s) may obviate the objection(s): (claim 1, line 9, "the particular value"; replacing "the" with --a--), (claim 2, line 3, "the X-ray pulse"; deleting "the"), (claim 2, line 3, "the tube current"; deleting "the"), (claim 2, line 4, "the tube voltage"; deleting "the"), (claim 4, line 1, "the injection rate"; replacing "the" with --an--), (claim 4, line 5, "the parameter"; replacing "the" with --a--), (claim 4, line 6, "the flowrate"; replacing "the" with --a--), (claim 4, line 9, "the particular value"; replacing "the" with --a--), (claim 7, lines 1-2, "the heart"; replacing "the" with --a--), (claim 7, line 4, "the injection rate"; replacing "the" with --an--), (claim 7, line 8, "the parameter"; replacing "the" with --a--), (claim 7, line 9, "the flowrate"; replacing "the" with --a--), (claim 7, line 12, "the particular value"; replacing "the" with --a--), (claim 8, line 8, "the X-ray exposure"; replacing "the" with --an--), (claim 8, line 8, "the picture-taking"; replacing "the" with --a--), (claim 8, line 9, "the particular value"; replacing "the" with --a--), (claim 9, line 1, "the injection"; replacing "the" with --an--), (claim 10, lines 1-2, "the heart"; replacing "the" with --a--), (claim 10, line 11, "the X-ray exposure"; replacing "the" with --an--), (claim 10, line 11, "the picture-taking"; replacing "the" with --a--), and (claim 10, line 12, "the particular value"; replacing "the" with --a--).

Claims 2, 3, 5-7, and 10 are objected to by virtue of their dependency. For purposes of examination, the claims have been treated as such. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3, 6, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Horbascheck (DE 4210121).

5. Regarding claims 1 and 8, Horbascheck discloses a device and method for producing images of an object (fig. 3, #7) that is subject to a cyclic spontaneous movement, comprising a) an X-ray unit (fig. 3, with #3) for producing a series of two-dimensional projected pictures (fig. 3, with #13 or 15) of the object (fig. 3, #7); b) a measuring device (fig. 3, #20) for determining a parameter characteristic of the spontaneous movement of the object (fig. 3, #7); c) a data processing device (fig. 3, #2) that is coupled to the X-ray unit (fig. 3, #3) and the measuring device (fig. 3, #20) and that is designed to drive the X-ray unit as a function of a particular value of the characteristic parameter in such a way that, during a predetermined movement phase to be displayed, pictures are taken of the object with a higher X-ray exposure rate and/or picture-taking rate than during the other movement phases (figs. 4 and 6).

6. Regarding claim 2, Horbascheck further discloses that the data processing device (fig. 3, #2) is designed to adjust the picture-taking rate, X-ray pulse duration, tube current and/or tube voltage of the X-ray unit (fig. 6).

7. Regarding claim 3, Horbascheck further discloses that the object is a heart (fig. 3, #7; and fig. 4).

8. Regarding claim 6, Horbascheck further discloses that the measuring device is an electrocardiograph apparatus (fig. 4).

9. Claims 4, 5, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Lienard et al. (US 2003/0069499).

10. Regarding claims 4 and 9, Lienard et al. discloses a device and method controlling an injection rate of a contrast agent in a vascular system (paragraph 40), comprising a) an injection pump for injecting the contrast agent at a controllable injection rate (fig. 7, #65); b) a measuring device (fig. 7, #64) for determining a parameter characteristic of a flowrate in the vascular system; c) a control unit that is coupled to the injection pump and the measuring device and is designed to drive the injection pump as a function of the particular value of the characteristic parameter in such a way that the contrast agent follows a predetermined concentration pattern in the vascular system for controlling the injection rate of a contrast agent into the vascular system of the heart (paragraph 41).

11. Regarding claim 5, Lienard et al. further discloses that the predetermined concentration pattern necessarily produces an approximately constant contrast display during the contrast-agent

injection in the case of an imaging picture of the vascular system (paragraph 53) due to the acceleration and deceleration of the contrast medium.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Horbascheck as applied to claim 1 above, and further in view of Lienard et al.

Horbascheck discloses a device as recited above.

However, Horbascheck fails to disclose a device controlling an injection rate of a contrast agent in a vascular system, comprising a) an injection pump for injecting the contrast agent at a controllable injection rate; b) a measuring device for determining the parameter characteristic of the flowrate in the vascular system; c) a control unit that is coupled to the injection pump and the measuring device and is designed to drive the injection pump as a function of the particular value of the characteristic parameter in such a way that the contrast agent follows a predetermined concentration pattern in the vascular system for controlling the injection rate of a contrast agent into the vascular system of the heart.

Lienard et al. teaches a device controlling an injection rate of a contrast agent in a vascular system (paragraph 40), comprising a) an injection pump for injecting the contrast agent at a controllable injection rate (fig. 7, #65); b) a measuring device (fig. 7, #64) for determining a

parameter characteristic of a flowrate in the vascular system; c) a control unit that is coupled to the injection pump and the measuring device and is designed to drive the injection pump as a function of the particular value of the characteristic parameter in such a way that the contrast agent follows a predetermined concentration pattern in the vascular system for controlling the injection rate of a contrast agent into the vascular system of the heart (paragraph 41).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the device of Horbascheck with the device of Lienard et al., since one would have been motivated to make such a modification for minimizing the total dose of contrast fluid to be injected (paragraph 42) as shown by Lienard et al.

13. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lienard et al. as applied to claim 9 above, and further in view of Horbascheck.

Lienard et al. discloses a method as recited above.

However, Lienard et al. fails to disclose the production of an image of the heart during the contrast-agent injection in a method of producing an image of an object that is subject to cyclic spontaneous movement, comprising the steps of a) producing a series of projected X-ray pictures of the object; b) measuring a parameter characteristic of the spontaneous movement of the object; c) controlling the X-ray exposure rate and/or the picture-taking rate as a function of the particular value of the characteristic parameter in such a way that the X-ray exposure rate and/or the picture-taking rate is higher during a predetermined movement phase, to be displayed of the object than during the other movement phases of the object.

Horbascheck teaches production of an image of a heart (fig. 3, #7) during a contrast-agent injection in a method of producing an image of an object that is subject to cyclic spontaneous movement, comprising the steps of a) producing a series of projected X-ray pictures (fig. 3, with #3) of the object; b) measuring a parameter characteristic of the spontaneous movement of the object (fig. 3, with #20); c) controlling an X-ray exposure rate and/or picture-taking rate as a function of a particular value of the characteristic parameter in such a way that the X-ray exposure rate and/or the picture-taking rate is higher during a predetermined movement phase, to be displayed of the object than during the other movement phases of the object (figs. 4 and 6).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the method of Lienard et al. with the device of Horbascheck, since one would have been motivated to make such a modification for increasing sharpness and resolution (abstract) as shown by Horbascheck.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Cheng Glen Kao whose telephone number is (571) 272-2492. The examiner can normally be reached on M - F (9 am to 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Chih-Cheng Glen Kao/
Primary Examiner, Art Unit 2882